# SECTION 2
## STRATEGIC DIRECTIONS AND INITIATIVES

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The most critical challenge facing technology providers is to stay current with the rapid pace of change in technology while harnessing innovations effectively to promote an organization's strategic goals, optimize service efficiencies, and successfully meet end-user and public expectation. Advances in technology facilitate the delivery of better and faster service at a reduced cost. However, investments in technology are expensive and incorporation into an organization's business complex. New technology must be adopted carefully and integrated wisely into the existing technology infrastructure of an organization so as to minimize operational disruption and maximize the benefits in a cost-effective manner. The following nine strategic initiatives address the County's objective of providing effective, efficient and customer-oriented access to data and services for both constituents and internal government customers on an enterprise scale.

## 2.1 E-GOVERNMENT

The e-Government initiative is a foundational program supporting the County's goal of a "*government without walls, doors, or clocks*". The comprehensive strategy uses enabling technology, policy and processes that integrates the Fairfax County Web Site www.fairfaxcounty.gov, Kiosks, Interactive Voice Response (IVR) platforms, and incorporates Cable TV platforms, the County's Public Access sites in Libraries and Access Fairfax sites, and the County's Communications Plan for comprehensive and cohesive access to information and services that span over fifty agencies services. In addition to the on-going efforts to enhance the look, feel, navigation and search capabilities of the Web, and deploying new services and transactions, the strategy incorporates CRM and Content Management tools for wide-ranging service options. The County has achieved much success and acclaim for its e-government focus in integrating the WEB, IVR and Kiosk platforms offering a variety of channels for on-line services for a complete public access capability to services and programs. In FY 2009, the County will continue its efforts to add new services to the e-government channels, including new transactions and e-payments and enhanced search. The e-government program will also continue to work with the Commonwealth of Virginia, regional partner municipalities, and federal government agencies in interoperability of common service portals and developing web services standards which will enable cooperative access and seamless integration of information for presentation of information and services regardless of the origin or the source.

Major FY 2008 accomplishments for e-Government initiatives included new applications such as Special Needs Registry, Social Needs Registry and Library Audio Books. The County will expand offerings in mobile access by making the County's public website accessible via wireless devices www.fairfaxcounty.gov/mobile which will allow citizens to interact with the County government through personal wireless devices. Additionally, a new kiosk was located at the Fairfax County Department of Housing and Community Development, and the County continues to work with Homeland Security on regional interoperability initiatives to establish policies, procedures and protocol for data exchange in support of emergency planning and response.

Sharing has become an integral part of the Web experience. It is often referred to as online collaboration, and is now also known as Web 2.0, social networking or social media.

A few examples include wikis (community developed reference material), podcasts (subscription-based audio information), RSS or Really Simple Syndication feeds (subscription-based information), Second Life (virtual reality) and MySpace (social networking). The wide spread use of Web 2.0 in social networking enables wide spread collaboration and information sharing, and enables individuals to rapidly share news and opinions worldwide.

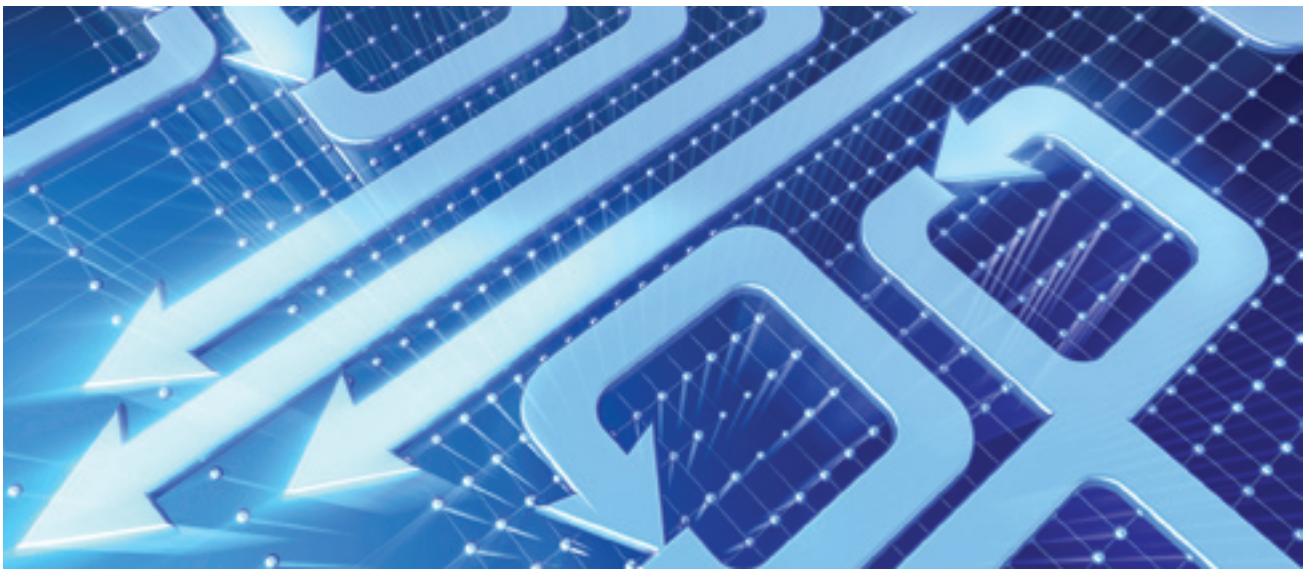
Through e-Government initiative, Fairfax County Government uses enabling technology to provide a "government without walls, doors, or clocks". Thus far, efforts have largely been focused on providing access to services. However, services are only part of the relationship between citizens and government. Fairfax County is expanding its efforts to provide citizens the necessary tools for interaction and participation with County government in order to improve communication and services (Citizen-to-Government Networking).

Many tools will help interested citizens learn more about the County's operations, programs, and activities. The County has long made it possible for people to subscribe to information that is published through e-mail (http://www.fairfaxcounty.gov/email/lists/), and is increasing the breadth of information available through various e-channels. The County provides RSS feeds (http://www.fairfaxcounty.gov/rss-feeds/), which allow users to have information sent to them through tools explicitly designed to track published information. The County continues to expand access to information through County podcasts (http://www.fairfaxcounty.gov/podcasts/).

Three county-wide pages have been launched on leading social networking sites: Facebook (http://www.facebook.com/group.php?gid=7901829756 – account required), MySpace (http://www.myspace.com/fairfaxcountygovernment), and YouTube (http://www.youtube.com/user/fairfaxcountygov). Posting content on these sites (which reach millions of people) allows the county to reach an expanded, and potentially younger, audience than it has in the past. The Office of Public Affairs maintains the content for these sites, which is often repurposed from existing material.

The County's Get Fairfax County campaign (www.fairfaxcounty.gov/getfairfax), consolidates all the ways residents and employees can stay connected with the county, including: the social networking sites, information available on 703-FAIRFAX, News to Use, e-government services, podcasts, RSS feeds, Weekly Agenda and emergency alerts.

FY 2009 goals include expanding the use of Citizen-to-Government Networking by offering Moderated Discussions for key County initiatives. While more content will be developed for already supported channels, efforts will be focused on developing policies and procedures for publishing County information, making services available through shared sites in the public domain to reach a broader audience, and delivering content and services through additional channels. Building new e-service transactions and e-payments, continued improvements for navigation, improved synchronization of content from disparate sources, addition of enhanced interactive features to the WEB site to expand and improve applications such as a Special Needs registry supporting emergency response situations will remain a strategic focus. In addition, DIT will continue enhancements to the e-Government channels for compliance with Section 508 for accessibility; and maintain the ultimate goal of facilitating the delivery of integrated and accurate information to citizens via multiple platforms along with implementation of additional web search capabilities.



## Customers Served

**Kiosk:** more than 10.8 million "Screen Touches" to date
**IVR:** 4 million since FY 2005
**Web:** 52,445 visitors per day, more than 1,600,000 visits per month

## Information and Services Available

Adult education classes ..... *Web*
Becoming a child-care provider ..... *Web, Kiosk*
Board Meeting minutes (searchable) ..... *Web, Kiosk*
Budget information and approved budget ..... *Web*
Bus tour schedule ..... *Web, Kiosk*
Child-care provider list ..... *Web, Kiosk*
Collection of household trash & recyclables ..... *IVR, Kiosk*
County Code – full text ..... *Web*
County demographics ..... *Web, Kiosk*
County maps, scrollable, printable ..... *Web, Kiosk*
Courts - Circuit, General District, and Juvenile ..... *Web, Kiosk, IVR*
Crime statistics, Wanted List, Neighborhood Watch ..... *Web*
DTA EPay ..... *Web*
DTA Tax Evaders
HIPAA
Institute for Earl Learning Training
iCARE DTA Real Estate Assessment and Information Query ..... *Web*
Library Graded Reading Lists
Library Picture Books
Offsite ..... *Web*
Public Meeting Calendar
Community Emergency Alert Network System (CEAN)
Fire & Rescue Media Information ..... *IVR, Kiosk*
Health information ..... *Web, IVR, Kiosk*
Housing information ..... *Web, IVR, Kiosk*
Inspection scheduling status ..... *IVR, Kiosk*
Information for victims of crime ..... *IVR, Kiosk*
Job opportunities ..... *Web, Kiosk*
Library information line ..... *IVR*
Multi-jurisdictional information ..... *Kiosk*
My Neighborhood
Newcomer information ..... *Web, IVR, Kiosk*
Parks/Recreation information ..... *Web, IVR, Kiosk*
Public safety information ..... *Web, IVR, Kiosk*
Real estate property assessment & tax information ..... *Web, IVR, Kiosk*
Seniors information and programs ..... *Web, IVR, Kiosk*
Frequently Asked Questions ..... *Web, Kiosk*
RSS Feeds ..... *Web*
Podcasting ..... *Web*

## Doing Business with the County

Access Health Department food inspections database ..... *Web*
Access GIS aerial photography with pan and zoom ..... *Web*
Apply for County jobs ..... *Web, Kiosk*
Apply for a library card ..... *Web, Kiosk*
Board of Supervisors compliant forms ..... *Web, Kiosk*
Building Permit Fee Estimate ..... *Web, Kiosk*
Directly connect to County staff ..... *Kiosk*

Download request for proposal/invitation for bid ..... *Web*
Electronic Mailing List ..... *Web, Kiosk*
Estimate Electrical Permit Fee ..... *Web, Kiosk*
File complaints about landlord or consumer problems ..... *Web, Kiosk*
Find location of closest Library by entering zip code ..... *Web, Kiosk*
Register & pay for Park Authority classes, camps, & tours ..... *Web, IVR*
Library Audio Books ..... *Web*
Locate facilities and public transportation ..... *Kiosk*
Obtain permit/plan status ..... *Web, IVR, Kiosk*
Pay taxes with credit card ..... *Web, Kiosk*
Pay taxes via eCheck ..... *Web*
Pay traffic tickets with credit card ..... *IVR, Kiosk*
Query current real estate property & tax information ..... *Web, IVR, Kiosk*
Query Human Services online "Resource Guide" ..... *Web, Kiosk*
Query for current position on the Housing Waiting List ..... *IVR, Kiosk*
Query specific court case information ..... *IVR*
Query status of an inspection, permit, or plan ..... *Web, IVR, Kiosk*
Query Victim Services data for offender release date info ..... *IVR*
Register a vehicle ..... *Web*
Request faxes of court fees and procedures ..... *IVR, Kiosk*
Renew vehicle registrations ..... *Kiosk*
Reserve a golf tee time ..... *Web, Kiosk*
Reserve/renew Library books – search catalogue ..... *Web, Kiosk*
Reserve a picnic area ..... *Web, Kiosk*
Report change of address for tax purposes ..... *Web*

| | |
|---|---|
| Report a lost pet | *Web* |
| Report a zoning or noise ordinance violation | *Web, IVR, Kiosk* |
| Search for information in historical newspaper | *Web* |
| Search for Health Department clinics by area of County | *IVR* |
| Search for County agency telephone numbers by keyword | *IVR, Kiosk* |
| Special Needs Registry | *Web* |
| Sheriff Service Civil Process | *Web, Kiosk* |
| Subscribe to County publications | *Web, Kiosk* |
| Social Needs Registry | *Web* |
| Volunteer to help in the Library or Parks | *Web, Kiosk* |
| Zoning and Noise Ordinance compliant form | *Web, Kiosk* |
| Athletic Facilities Application Requests (AFAR) | *Web, Kiosk* |

## 2.2 ENTERPRISE CONTENT AND DOCUMENT MANAGEMENT

The County established a strategic approach to content and document management by developing an integrated solution on an enterprise platform. Content Management is the foundation for the organization and use of information from structured data (through business applications), and unstructured data in electronic or imaged documents (word processing documents, spreadsheets, e-mail, and reports).

The County continues to develop an enterprise information architecture which frames this plan and becomes a tool for web services, applications development, and web static page content search and navigation. Since many government processes still require paper records, necessitating the storage of large volumes of paper over prolonged periods of time, the solution includes a rich document management capability to allow for more efficient flow and storage of vast quantities of required paper records. The enterprise document management technology with incorporated workflow solution improves business process efficiency and productivity by providing the capability to view hard copy records through automated applications in order to provide required services. In addition to fast and reliable business processes, the document management solution minimizes the need for storage of paper records, reduce storage space needs, protect against mounting storage costs, and reduce human and physical plant asset risks associated with handling voluminous units of paper.

Business Reference Model (BRM) is the basis for data classification that aligns with three business areas: Service to Citizens, Support Delivery of Services and Internal Operations and Infrastructure. These areas are subdivided into thirty-five separate lines of business which cut across all agencies. BRM provides the foundation for Enterprise Information Architecture and allows for data integration across lines of business within the County. BRM serves as the foundation of a more exhaustive Taxonomy of Services under development for the County. When combined with other metadata, this taxonomy facilitates improved search and classification capabilities across application data and static content. The classification of data is the first and most important step in correctly implementing an Enterprise Content Management System.

In addition to continued work on the Information Architecture and implementing *Documentum's* Content Management System, the following has been accomplished:

- Classified the variety of information types currently offered on the Web Site
- Implemented workflow processes and define requirements for contributing content to the County's Web site
- Piloted delivery platforms for Mobile Content (i.e. Wireless "Contact Us" )
- Developed an XML Document Model and Metadata associated with static content
- Implemented the Technical Architecture for Content Management
- Continued work on the Information Architecture including:
  - the "Taxonomy of Services" for the County
  - the Inventory of Systems classified by Lines of Business

  - development of an XML Namespace for the County
  - development of repositories for storing XML Objects
- Developed the template and methodology for agency web files that are currently on the County's Web site

FY 2009 goals for Integrated Content and Document Management include:

- Convert the content of WEB files to XML for County agencies current pages
- Continue XML content migration to Web, Kiosk and Mobile platforms
- Build new XSLT templates based on content classification ( increases the ability for custom look and feel for special content requirements such as news releases)

Content management integrates with document management. For business activities that also rely on a variety of documents, the document management initiative employs technology at the beginning of a document's life cycle (originated as hard and soft copy) using the system to catalogue and track the documents and enable automated workflow processes through the entire life cycle. This comprehensive approach and associated implementation of technology is called Integrated Document Management (IDM). Through research and analysis conducted in 2004, the County found that best in breed products for content management engines also incorporated document management needs. The integrated solution is more cost-effective, and provides a seamless integration for use of information found in imaged documents and information in databases and other systems required for a complete business transaction. IDM technology provides the ability to organize electronic documents, manage content, enable secure access to documents, route documents, automate related tasks, and facilitate document distribution.

Another component of IDM includes document imaging, which will continue to play a much larger role in the County's business environment. Despite e-government efforts, many business processes remain dependent on paper documents. Often due to legal mandates, many government processes remain paper-intensive, and require agencies to store large volumes of paper for extended periods of time. Consequently, many County agencies are exploring technical solutions to alleviate the demand for increased storage space, improve business processes, and protection against disasters that can potentially destroy volumes of important paper documents. Integrated Document Management solutions encompass core business practices, as well as provide better archival and disaster recovery capabilities.

In FY 2007, the County implemented IDM technology for document work flow projects in the Office for Children, initiated work for the Juvenile and Domestic Relations District Court, began multiple initiatives for the Department of Family Services, and continued work in the Commercial Inspections Division of Land Development Services in the Department of Public Works and Environmental Services to meet the needs of the sewer lateral section. Analyses were conducted in the Department of Finance for an automated Accounts Payable imaging system, and for integration with the Commonwealth of Virginia systems for the Department of Family Services.

Although the individual departmental business requirements vary for the use of IDM technology, the following benefits and quality improvements have resulted from these projects:

- Increased staff productivity from employees ability to share and act on accurate information through the delivery of the right documents at the right time
- Enhanced communication and collaboration through shared information
- Improved speed of information and transaction flow throughout county agencies
- Improved access and security through controlled access to sensitive documents
- Reduced time spent searching for critical documents
- Improved disaster recovery through electronic storage and backup of information that is far more secure than paper
- Reduced clerical, paper, printing and storage costs

In FY 2009, the County will implement the IDM solution for the Department of Housing and Community Development, and expand the electronic accounts payable solution for the Department of Finance.

Program plans include continued initiatives to implement IDM and workflow technology for projects in the Department of Family Services, Office for Children, the Juvenile and Domestic Relations District Court, the Clerk to the Board office, and the Department of Planning and Zoning. The program will also ensure development of a robust and scalable infrastructure "core" that can incrementally grow over time to meet future needs.

Document management and imaging projects, especially when work flow automation is used, can greatly improve operational efficiency and effectiveness. In addition, these projects deliver enhanced information security. Granular control over each piece of data enables access by authorized users, and only for the specific information they need and are authorized to access. These solutions provide business units with the capability to reduce costs, accelerate business transactions, ensure regulatory compliance, and support cross-department communication.

## 2.3 CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

Expectations for easy access to government services continue to expand dramatically. Citizens look for ways to interact with their government through channels that best suit their needs. Fairfax County continues to respond to this growing need through the implementation of Customer Relationship Management (CRM) technology applications. CRM provides agencies and their staff improved opportunities for providing citizens quick and convenient access to information about County programs and services.

In earlier adoption of technologies to enhance tracking and response to citizen inquiries, *Internet Quorum*' (IQ), and '*IPhinity*' call distribution technologies were successfully implemented and proved beneficial to both constituents and County offices and agencies. Significant staff productivity and efficiency improvements were achieved in supporting information exchange with citizens through multiple communication channels: in-person, telephone, e-mail, web, and Kiosk. Successful implementation in the Offices of the Board of Supervisors and the Clerk to the Board provided enhanced opportunities to record, route, and manage interactions with constituents and organizations, and subsequent phases provided expanded capability throughout the County. The Web enabled system '*Internet Quorum'* (IQ) replaced several obsolete custom applications and provided the expansion of IQ to Office of Public Affairs, Consumer Protection, Human Rights office, Department of Public Works and Environmental Services, County Executive and the County's Legislative function within the County Executive's office, Department of Purchasing & Supply Management, Department of Transportation and Alternative Dispute Resolution Program.

The Clerk to the Board of Supervisors uses the IQ Boards and Commissions module to track appointments and nominations to boards, committees, and councils and maintain a complete correspondence history regarding contact with these individuals. Consumer Protection Division's modules include Complaint Tracking, License Administration and Taxicab Inspections. The systems enable staff to rapidly open and begin investigating cases. By expediting the administrative components of case investigations, the initial response time was reduced, resulting in earlier detection of consumer protection violations. The historical research required to discern whether businesses are repeat offenders or not, and how past cases were resolved is now expedited; cross-referencing cases between investigators allows department staff to share online information pertaining to the same or similar consumer protection violations, and facilitates collaboration between department investigators on complaints and resolution techniques. The system also enables citizens to access complaint histories of businesses online in order to research and better determine the pros and cons of doing business with those merchants. In addition, the system allows Fairfax County Police access to license information for all solicitors, peddlers, pawnbrokers, massage therapists, taxi drivers, etc.

The Office of the County Executive uses the IQ Legislative Tracking Monitor application to assist County

agencies monitor, review, respond to and track state legislation when the Virginia General Assembly is in session. The system includes the automated downloading of legislative bill information from the Commonwealth's Legislative Information System, thus eliminating the need for a legislative aid to manually perform associated data entry tasks, and enhances county staff's ability to search for bills and comments quickly. The Office of Public Affairs also uses the IQ system and includes publications and brochure tracking and workflow. Other benefits include elimination of the cumbersome process of manually tracking constituent requests with a more efficient means of processing and tracking mandated Freedom of Information requests. The Human Rights Commission uses the system to create, track and report on case workflows allowing the HRC investigators to meet multiple requirements. The system also streamlines complex discrimination processes and addresses privacy concerns for investigator and conciliators.

The FY05 *'IPhinity'* call center distribution application implemented for Human Services Consolidated Services Planning (CSP) call center offers efficiency in supporting the growing number of people seeking assistance from social services agencies with limited staff geographically disbursed at various sites. '*IPhinity*' is customizable to route incoming contacts based upon selected criteria, set levels of access, record specialize voice promotes, manage calls based on specific business requirements, and track all interactions to ensure closed-loop resolution. CSP is able to monitor and manage workload and performance with a comprehensive set of analytical tools for real-time and historical reporting. Computer Telephony Integration (CTI), internal calls or transferred calls are presented to case worker along with a "screen-pop" of information from agency case systems and databases relevant to the citizen's call. This integrated approach provides CSP the opportunity to better develop relationships with citizens and more effectively focus resources to address their needs

Accurate call management, collaborative capabilities, and workforce management tools aid in access to legacy systems, reduce paperwork time, and increases employee productivity. Centralized control to all call center resources, estimated wait time, skills-based routing, virtual call center processing, self-service options, callback messaging, and emergency recording, are all standard features available in the easy-to-use system administrator management interface.

## Enhancements

Future enhancement of the County's CRM initiative include planning for enterprise 311 telephony and integrating existing Call Center applications for supporting several agency and cross agency business processes with the goal of facilitating citizen interaction with the County through a single, clear point of entry, eliminating the need to navigate through hundreds of telephone numbers to find the appropriate service departments. A virtual 311 Call Center will integrate existing call center assets, improve the citizen's communication and experience with Fairfax County Government and serve as the County's primary unified communication gateway for all residents and business. This single point of access between citizens and local government will standardize call taking operations and enable employees to answer citizen questions and log service requests. Call takers will be able to respond to a broad range of questions spread across multiple databases which ensure all call takers have the most current information at their fingertips, regardless of the source. Based on department business rules, call takers can process request for service or issues using the comprehensive and flexible workflow tool provided to integrate routing to appropriate staff members. Service level agreements and partnerships with appropriate state, federal, and private entities that are partners with the County in service delivery will be established to further meet the citizen service needs and increase confidence in government. Other modules will be added, including CRM analytics and integration of the County's Geographic Information Services (GIS), which supports the pinpointing of related complaints or contacts within a specified geographic area.

It is now a business necessity to integrate CRM technology applications and communication channels with a common interface to supply one-stop customer service and a single citizen view within the County. CRM technology applications improve service delivery to the citizens before, during, and after contact. An enterprise CRM application will consolidate citizen information and enable optimal service and rapid citizen response. Strategic alignment and integration of IT investment with IQ, *IPhinity*, and FIDO are the building blocks to support the usage of an enterprise case management and better inform the citizens and increase satisfaction. It will also provide greater visibility into the top concerns of constituencies; which enables agencies to proactively address local matters of interest and concerns, resulting in both service improvements and a reduced volume

of incoming inquiries. Integration of these systems that cross agency processes streamlines and creates transparency of actions that cross departmental silos and will facilitate cross functional teams like Code Enforcement, Foreclosure information, normal inspections, courts information, and others.

An enterprise-wide, automated, full function distributed CRM solution will organize the tracking and monitoring of communications, cases, contacts, events and complaints. It will offer a Web-enabled solution that will provide a robust, consistent foundation for managing all citizen relationships and support a knowledge-based, centralized repository of data allowing the County to leverage emerging technologies as it moves into a more unified messaging environment. Live help using a Web interface, such as instant messaging, will give users another method for receiving real-time support, and will incorporate multi-media and other forms of digital and wireless communications to improve the user experience.

Enterprise CRM supports a holistic view to aid in making well-informed decisions about service delivery to the County's diversified population and improvement of communication through seamless unified access of information via the County's web site, Kiosk, IVR systems, cable TV, in-person, as well a live 311 Agent. In FY 2007, the County awarded a contract to IBM for Siebel CRM platform. Initial efforts involved development of the overall framework and pilot application in the Office of Public Affairs which was successfully implemented in FY 2008.

The goal for FY 2009 is to continue implementation of CRM with expansion to other county agencies that have call center like processes or needs, with integration to enterprise and agency specific back-end knowledge systems such as FIDO, IQ and others. The CRM applications will be integrated with the County's new IP based telecommunications platform, AVAYA, which will enable screen pop interaction with case record information, contact interaction records and profiles, and transparent case escalation.

## 2.4 GEOGRAPHIC INFORMATION SYSTEM (GIS)

Fairfax County's GIS has continued its growth in the number of direct GIS users (now over 700) as well as thousands of indirect users, working with applications that now include GIS embedded as part of their operation. Some of these tools are available to the public via the Internet, as well as county staff on the intranet. FY 2008 saw the implementation of a robust intranet web GIS tool which enables agencies to better provide GIS capability to their staff thus increasing the number of GIS users and spatially enabled applications. GIS has assisted other agencies with integrating GIS with public web applications (e.g., LDS NET and FIDO). The expanded use of GIS technology enabled GIS branch to meet its goals for 2007-2008. Overall GIS usage by the public and by County staff increased as a result of heavier use of existing applications and introduction of new applications including the My Neighborhood Police Incident Viewer (see Figure 1). The Digital map viewer experienced increased usage with the addition of more property/zoning and other maps added for viewing/downloading via the internet. With the recent addition of historic property and zoning maps, complete sets of property maps dating back to 1961, and zoning maps dating back to 1986 are currently available for viewing.


***Figure 1: My Neighborhood – Police Incidents***

Over 27,000 pre-made maps and images of historic maps are currently available online. The volume available data in the GIS data warehouse continues to grow; the GIS data warehouse now holds over 600 layers of data. The overall size of the vector data has increased to 207 GB (including business data tables), and the raster data is now over 2.2TB on line and

an additional 3.5 TB currently archived that will be moved to production.

Vector data includes all of the data layers listed in Table 1 and is represented by points, lines or polygons. Raster data includes the digital imagery: raw photographs, orthophotos, and oblique imagery.

The volume of data within the layers has also increased. Table 1 illustrates some of the most significant layers and their 2005 - 2008 values, along with some additional values that only have recent data:

**Table 1**

| Data Layers | FY 2005 | FY 2006 | FY 2007 | FY 2008 |
|---|---|---|---|---|
| Parcels | 341,000 | 343,500 | 356,000 | 357,300 |
| Addresses | 360,000 | 365,000 | 368,000 | 364,700 |
| Building Outlines | 248,000 | 252,000 | 257,000 | 257,277 |
| Miles of Roads | 4,000 | 4,800 | 4,700 | 4,718 |
| Number of streetlights | | | 57,939 | 58,935 |
| Linear miles of sanitary sewer lines | | | 3,350 | 3,373 |

In FY 2009, the GIS branch will continue to increase the number of GIS enabled applications utilizing new web-based GIS tools, and further enhance existing web-based GIS applications (for instance My Neighborhood). GIS data will continue enhancements and improvements similar to achievements in FY 2007-2008 where the accuracy of the centerline data and its graphical representation were significantly enhanced. For example, GIS improved My Neighborhood adding watershed information to the search results. Together with the Police incident viewer, My Neighborhood serves over 20,000 maps per month. One month after being featured on the local TV evening news, over 60,000 total maps were served.

In consultation with other County agencies (e.g., transportation) and state agencies GIS developed a multimodal transportation model to handle roads, trails, rails, and waterway transportation. The data model is important for the new Computer Aided Dispatch system due for implementation in early 2009. That model will also supply data to other County operations. The intent is to have a single data store supplying all County centerline and transportation needs.

Figure 2 illustrates a draft of the updated logical data model.

In response to the Board of Supervisor's Land Use Accessibility Initiative, GIS has been working with LDS net and also investigating 3-D capability. GIS has obtained a 3-D model of a square mile area of Tyson's Corner and has ordered one of about three sq miles of the Herndon/Reston Dulles Toll road corridor. GIS is also investigating tools to enable development and web viewing of 3-D imagery. The intent is to implement a pilot by the start of FY 2009. 3-D work is labor intensive and places significant demands on a user's computer.

In response to a substantial increase in the use of GIS technology to support to Public Safety and Emergency Operations, two additional staff members were added to work directly on public safety related projects and data. The increased workload includes the need to enter preliminary parcel data into the GIS which increases data entry and editing. Substantial effort has gone into coordinating public safety agency initiatives to prepare for GIS integration into the new GIS based Computer Aided Dispatch system. This effort will continue beyond the system's implementation as GIS develops into an even more crucial tool to public safety operations.

The availability of key County data digitally through the GIS provides a range of benefits to constituents as well as County staff. The orthoimagery is widely used within GIS as well as over the web. Since the parcel and zoning data is now maintained digitally, production of the County's parcel and zoning books were greatly accelerated. Many time consuming manual steps were replaced with the digital production process enabling staff to capture additional

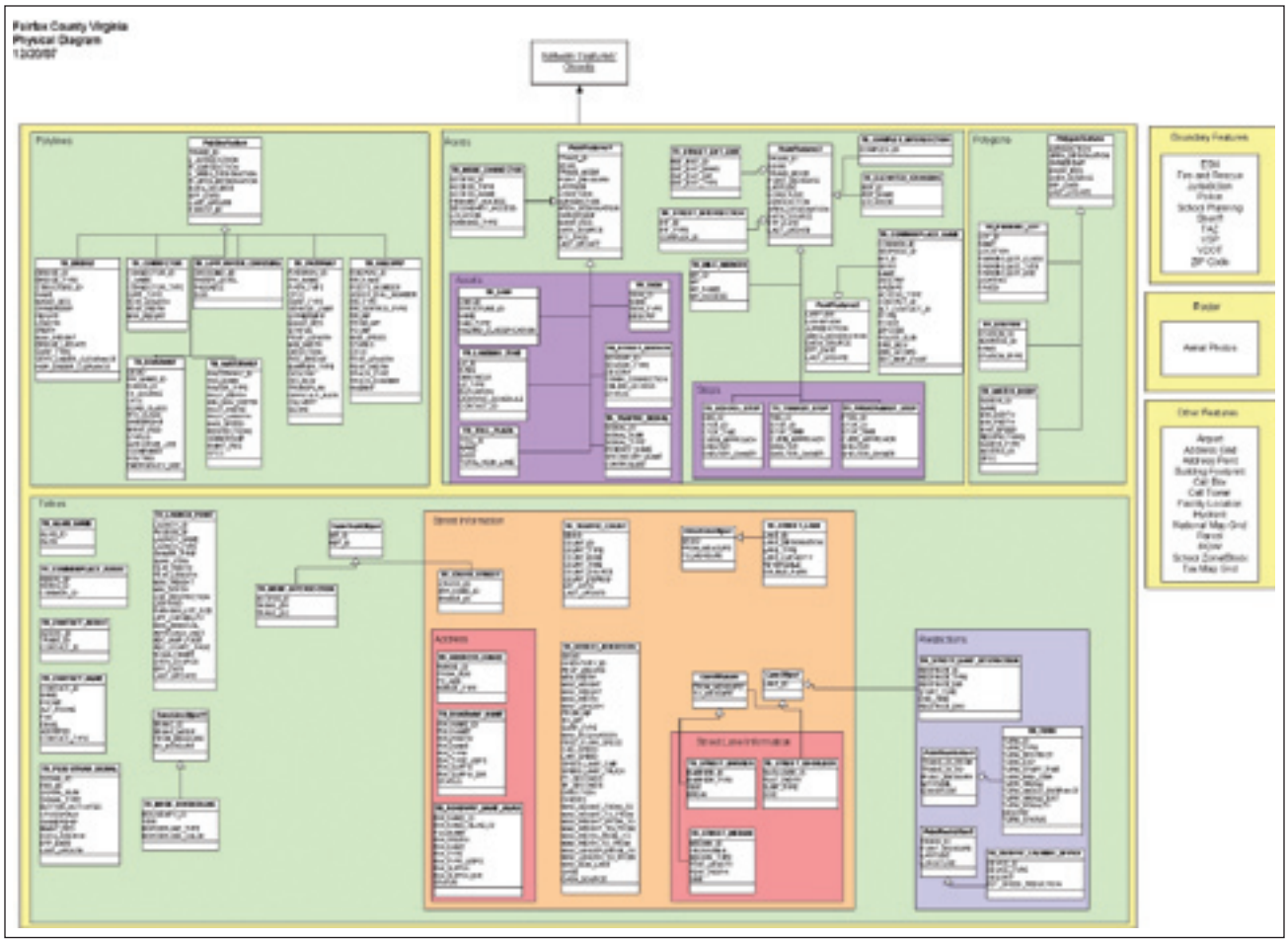


***Figure 2: Multimodal Transportation Model***

features in the GIS (e.g., more easements, particularly conservation easements). Additionally, map changes are posted to the internet daily, providing web users of the Digital Map Viewer with the latest versions of the maps. Prior to these enhancements maps were printed for distribution annually. Digital production has enabled the use of color in maps, and development of new symbolization of zoning patterns are added features. The popularity of the frequently updated data is evident by the steady increase in usage of the Digital Map Viewer.

The breadth of GIS utilization across the County, and the extent of its integration into the overall IT architecture are reflected in the award winning plans and efforts of the preceding years. The awards recognize GIS' achievement in fostering and expanding the use of GIS applications to improve County operations:

- The County's GIS program received a "Best of Breed" award in the 2003 Digital Counties Survey. This survey and award recognition was conducted by the Center for Digital Government, in partnership with the National Association of Counties.
- County GIS programs received the VA Governor's Technology award for DPWES' use of GIS in routing refuse collection vehicles.
- In FY 2005 the County's GIS won FOSE's E-Town Award for GIS Integration.
- Fairfax County's GIS received international recognition via the Environmental Systems Research Institute (ESRI) Special Achievement in GIS (SAG) Awards for both the GIS Branch work and the countywide efforts in GIS.
- The National Association of Counties recognized Fairfax County for its use of GIS in the reapportionment process.

In cooperation with the state's Virginia Base Mapping Program, aerial imagery of the entire County was updated in FY 2007. The state previously flew the entire

County in 2002. In the intervening years, the County independently flew the entire County and acquired ortho imagery of one quadrant per year. The Northwest quadrant was developed from aerial imagery flown in 2001; the Northeast from 2003 imagery; the southeast from 2004; and the Southwest from 2005. This completes the County's first orthoimagery update cycle. The state's plan to fly the entire County in 2006 was delayed until 2007 due to contractual difficulties, as a result there is no aerial imagery of the County from 2006. Oblique aerial imagery of the entire County was taken again in 2007 (previously in 2005 and 2003), delivered and brought online in FY 2008. Oblique imagery shows the sides of buildings, which orthoimagery does not. The side views enable County Assessors to more efficiently view and determine property values. The views also provide public safety officials with key information in planning emergency response, as they can see windows and doors to determine dimensions and heights above the ground.

To give a sense of the two different types of imagery, an example of each is included below. Figure 3 is an orthoimage, taken directly over the homes, while Figure 4 is oblique, taken from the side rather than directly overhead.

In FY 2008 updating of the planimetric data was initiated. A Statement of Work was issued to request proposals to update approximately 25% of the County. This is a jointly funded project between DPWES and DIT, the intent is to update 25% of the County annually, ensuring that the planimetric data will be no more than 4 years old. This data has been requested by EQAC along with a number of County agencies, and will be a foundational component of the new Computer Aided Dispatch system's maps. The underlying GIS hardware and software architecture was further enhanced, the Oracle-SDE data warehouse SAN space migrated to a new SAN, and the SDE and Oracle software moved to the enterprise SUN server. Failover capability for Oracle and SDE were added, and the Citrix servers were upgraded to the latest version of Citrix (4.5). GIS moved the database and Citrix servers to the latest release of ESRI software (9.2) after extensive testing and reprogramming.

The Master Address Database project has successfully concluded. The Master Address Repository (MAR) is now online and available for direct search and integration into other applications. It is the authoritative source of parcel addresses for the County (It does not include business suite or apartment unit values since there is no County process to track them). Web services were developed to greatly simplify application's ability to link to the MAR to obtain parcel address data. Several other systems now link to the MAR including the My Neighborhood application and several internal applications such as IQ and FIDO. The MAR now holds almost 365,000 scrubbed parcel addresses for the County. Phase II of the MAR was initiated by developing an interface between MAR and the Real Estate database (IAS). Since the vast majority of County data is about a specific location within the County (approximately 80-90 percent of municipal data are locational), it is important to ensure that the data can be linked to the GIS in order to take advantage of "place-based reasoning" and analysis. The most common locational link is parcel address. The MAR provides current and correct parcel addresses to all County agencies. It standardizes the address format and simplifies linkage to address by making the data available on an enterprise server using County standard RDBMS.

***Figure 3***

***Figure 4***

The GIS Branch continues to provide County employees support via the DIT Technical Support telephone numbers. In FY 2008 and into FY 2009 GIS will be working with the County demographer to prepare for the 2010 census. The initial work involves identifying and providing a list of all residential addresses in the County to the Census Bureau. Subsequently Census will compile a list for the County that must be reviewed and which becomes the basis for the 2010 Census visits and mailings.

### Administrative Efficiencies and Service Quality Improvement

Over 25 County agencies use GIS to in their operations, including the GIS Branch itself. These include:

- The transition to digital property and zoning information now enables the GIS Branch to maintain these maps daily. These maps are processed and made available for County staff and public users via the web. Since the production process is digital, more map series can be easily added. In FY 2008 the soil series will be added to the digital map viewer. In FY 2009 the new soil data based on the countywide soil evaluation program conducted jointly with the federal Natural Resource Conservation Services and the Northern Virginia Soil and Water Conservation District will be added to the digital map viewer.
- The centerline file was modified to reflect the Northern Virginia common centerline elements and made available to County agencies and will be enhanced with the multi-modal transportation model which is now complete.
- Substantial savings are realized in the Department of Public Works and Environmental Services through the use of GIS. The agency was recognized by the State of Virginia for integrating GIS with refuse vehicle routing for additional flexibility and cost savings.
- GIS technology enabled the Department of Public Works to complete the mapping involved in the Streams Characterization Project in weeks rather than months.
- The Department of Public Works digitized the sanitary sewer lines into the GIS and maintains them regularly. Storm sewers digitization was completed and is now in the GIS data warehouse. The data is also available in the My Neighborhood application.
- The Department of Zoning is digitizing the Comprehensive Plan into the GIS for easier maintenance and viewing. The agency uses GIS in the urban design project for Tysons Corner; and has performed 3-D visualization work to better understand the proposed developments.
- The GIS now contains data from Fairfax Water and the City of Fairfax on hydrants and water mains.
- The Department of Transportation uses GIS to help plan pedestrian safety projects.
- The Health Department uses GIS to conduct emergency preparedness planning.
- The Park Authority uses GIS for a wide range of planning and management activities.
- Oblique and Ortho imagery are now available to 911 dispatch personnel, adding improved response evaluation since operators can view actual conditions prior to units arriving.
- The Department of Planning and Zoning staff uses GIS programming and analysis to tackle problems that would have ordinarily been overwhelming manual tasks. Such tasks include assignment of regional transportation analysis zone numbers to each of Fairfax County's 356,000 individual parcels. GIS programming now makes this a routine and quick process. GIS is streamlining the Area Plan Review (APR) through the use of a new Comprehensive Plan Amendment Tracking System (CPATS). In addition, GIS is used with CPATS to generate notices for plan amendment applications. User errors were largely eliminated and the latest information is always used. GIS is integrated into DPZ's Land Information System (DPZLIS), the Staff Report Locator Map Production System module of DPZLIS is used to quickly create staff report maps. Environmental planners use DPZLIS to generate environmental assessments of LDS or APR application subject areas. DPZLIS is also used widely by staff to generate custom page size maps of any location in the County. These products have been especially beneficial in Zoning Enforcement issues; public users can now check on the status of permits for development and view maps of the work via the internet.
- The Department of Transportation employed GIS technology for a variety of projects and analyses. GIS provided tremendous insight in understanding and predicting commuter use of Park

& Ride facilities and helps direct the department locate and manage new/potential facilities. In addition, Department of Transportation uses GIS technologies for the Fairfax Connector bus system's demographic analysis, route planning, and bus stop management. Many of these techniques are also used for the Employer Services program to best promote commute alternatives to Fairfax employers and their staff.

- In health areas, GIS was used as part of the West Nile Virus planning and response, as well as tracking tuberculosis in the County. Previously GIS had proven its value in the canker worm outbreak in FY 2001 (and before that the Gypsy Moth outbreak). GIS enabled County staff to quickly identify residents who would be affected by planned canker worm spraying and contacted them ahead of time. The GIS also provided spraying coordinates to the helicopter spray crews so that balloons would not have to be used, which was a significant time and cost savings. Drinking water wells have also been identified and entered into the GIS.
- The Fire and Rescue Department (FRD) makes substantial use of GIS and as a result is experiencing significant savings. For instance, in the process of responding to Fire Hydrant and Insurance queries, the GIS saves about 50 percent in staff time determining the distances. A new Web application under review will provide even more savings once it is developed and online. Additionally a 98% staff time savings were estimated in the countywide analysis of the process of identifying the five-minute response time areas for fire stations — a factor crucial to establishing response areas that are within response time limits.
- The Police Department has had significant success in its use of GIS in crime analysis. In multiple instances, the Department's crime analysts were able to identify spatial patterns in crime incidents and successfully predict the subsequent crime locations. In those instances suspects were arrested. Police now train some of their crime analysts as criminal profilers, an activity heavily dependent on the use of GIS.
- GIS was used extensively in planning for and responding to flooding in the Huntington area. These maps were helpful for both field personnel and staff in the Alternate Emergency Operations Center.

The GIS Branch continues its strategic interaction with County agencies to foster their development of GIS capabilities and integration into their business processes. The preceding years have seen GIS take root in most County agencies. The program will continue to expand and is an important tool for Homeland Security and Emergency Management efforts. The challenge is to continue fostering, broadening and integrating growth with management involvement and support.

The GIS Branch is also pursuing a number of strategic activities to foster the sharing of GIS data and resources, particularly in the area of homeland security. The County is a member of NACo's GIS committee which looks at key GIS issues affecting counties. The County's GIS manager is a member of the Council of Government's CIO's GIS subcommittee, working on regional interoperability initiatives including development of a regional GIS map, tying the GIS layer with a regional data exchange hub, and pursuing projects and funding to enhance regional GIS.

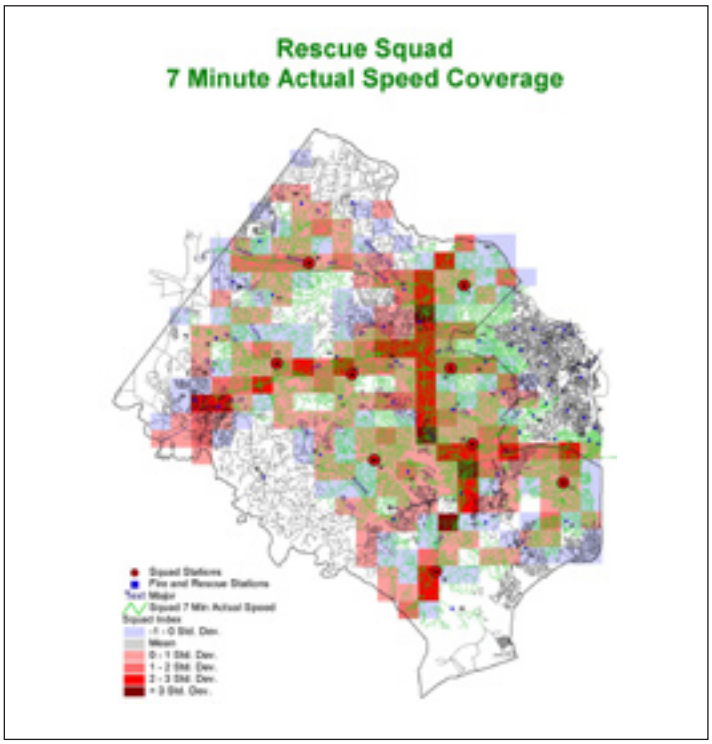
Fairfax County is a member of the Northern Virginia GIS managers group, an informal group that regularly meets to coordinate activities. The most recent accomplishment is the development of a regional centerline file structure that became part of a state wide centerline file project and which will be augmented with the results of the multimodal modeling work underway. The GIS Branch works closely with the State's GIS agency (Virginia Geographic Information Network, now part of Virginia Integrated Services Program), and now directly participates in the Emergency Operations Center when it is activated. In addition, the GIS Branch completed development of the My Neighborhood Police Incident viewer, and is working with the Police Department to develop a web-based incident mapping application which enables police to easily view detailed up to date incident statistics and locations internally. This internal application will have security to protect sensitive data.

Additionally, there will continue to be emphasis on data quality, system reliability and connectivity as well as implementation of new GIS applications. These aspects are crucial to implementing GIS as a data "utility" across the County so that users at any of the County's offices can "turn on" their GIS "data tap" and have all of the data they need available immediately. Data quality is a paramount issue; rigorous Quality Assurance/Quality Control measures have been implemented on the parcel data updates.

Similarly, rigorous quality standards were developed for the aerial imagery being acquired. System reliability is an increasingly crucial issue as more users integrate GIS into their daily operations. To ensure that the technology is available, the GIS Branch has procured additional servers, file storage and software to provide redundancy. The GIS Branch monitors the performance of its applications while the DIT's Technology Infrastructure Division monitors the underlying hardware and communications links to ensure reliability. Critical applications are monitored around the clock and staff is on call if system outages occur outside of work hours.

System connectivity is essential for thorough integration of GIS into County operations. It involves establishing robust, reliable and preferably real-time links between the GIS data warehouse and other vital County databases like the IAS Real Estate System, the Land Development System (LDS) and others. GIS staff will work closely with other agencies such as the Department of Tax Administration and the Department of Planning and Zoning to ensure optimum connectivity between the GIS data warehouse, the Master Address Repository and their operations as well as with DIT to help provide sufficient bandwidth for GIS to offices that have a need.

Finally, as the GIS Branch works closely with other agencies, web-based applications will be used wherever possible, staff will design and implement specific applications to enable users to more easily perform the spatial analysis and querying they need with GIS data. These custom applications will decrease the time necessary for queries and increase the number of staff that can use the data in applications designed specifically for their operational requirements.



## 2.5 FAIRFAX INSPECTIONS DATABASE ONLINE (FIDO)

The Fairfax Inspections Database Online (FIDO) project (formerly known as ISIS Replacement) is a strategic initiative to consolidate inspection services provided by multiple County agencies into a single software solution and to implement e-permitting capabilities for customers. The system enables all user agencies to work more collaboratively in their inspection and code enforcement efforts. This multi-million dollar, multi-year project connects four agencies in providing permitting, plan review, inspection, complaints management, and environmental health related services. Goals for this project include migrating from the mainframe environment to a platform that enhances multi-agency access and participation in the affected processes, enhancing customer service by streamlining the permitting process, and facilitating the performance of as much business as possible via the Internet. The new system will provide online permitting, facilitate enhanced plan review capabilities, integrate with the GIS to capture and present data in a graphical format, integrate with the existing Land Development Systems' (LDS) database to ensure the seamless availability of land development data, and provide a virtual one-stop shop for processing permit applications.

The approach for this project represents a concerted effort to harness the expertise of all stakeholders in the design, acquisition, and implementation phases to ensure a seamless, streamlined integration with all other pertinent systems. A project steering committee is comprised of the Chief Technology Officer (DIT Department Director), Department Directors from the FIDO user agencies, and the Deputy County Executive(s). In addition, teams of representatives from each of the core user agencies and the Department of Information Technology (DIT) have been established to assist in the management of this effort and for the coordination of gathering system requirements from the stakeholders. Customers and County staff that use the system on a daily basis formed numerous workgroups to provide critical input for the development of the user and system requirements. Additionally, these workgroups included staff of the Health Department, Department of Tax Administration, Fire and Rescue Department, Department of Planning and Zoning (DPZ), Department of Public Works and Environmental Services (DPWES) and DIT. The collaborative efforts of these groups provided input on the needs of all the beneficiaries, with a concentrated focus on the day-to-day customers and the numerous organizations that rely on the County for permit processing and inspection information. Many of these teams continue to work on the configuration and implementation of the system.

The FIDO system creates adaptability on a new platform that will serve as the foundation for all future e-permitting enhancements while providing immediate additional functionality and a streamlined process. The project will include the acquisition of a web-enabled system with the capability to provide access to permit information and the permit process 24 hours a day, 7 days a week and the availability of real-time wireless inspection results. The system will provide a virtual one-stop shop offering e-permitting opportunities for many projects not requiring plans. The system will also provide managers the ability to perform an ongoing analysis of efficiency and effectiveness of resource utilization.

Anticipated future enhancements to the new system include the, distribution and review of plans and permit applications by all required review agencies and the issuance of permits online for complex projects requiring the submission of large scale plans. The completion of this project will position the County to utilize additional e-government capabilities and will more fully integrate all of the land development processes to facilitate information sharing and one-stop permit processing. While enhancing customer service, this project will allow greater and immediate public access to permit related data, which in turn reduces customer inquiries and saves significant amounts of staff time. The management of the land development process will be enhanced by the ability to track construction projects throughout the project lifecycle. The consolidation of related data into a single system will improve the process as well as the consistency and reliability of information provided to customers. Finally, the vastly improved search and retrieval capability will facilitate research by the public and the County.

The early stages of this effort focused on the collaborative development of a comprehensive Request for Proposal (RFP) to procure an appropriate solution for the e-permitting system and to replace the multiple stand-alone inspection related databases being utilized by the Fire and Rescue Department (FRD), as well as the functionality required to manage complaints for the Department of Planning and Zoning

along with ISIS. In FY 2003, a comprehensive review of vendor proposals — including both custom solutions and COTS packages was completed. The review process included the formation of Selection and Technical Advisory Committees (SAC and TAC) that involved representation from all key user agencies as well as from the DIT. From this process, the Hansen, Inc. solution was selected. In FY 2004, the focus shifted to configuration and implementation of the new suite of software products.

During FY 2004 and FY 2005 the complaints module (i.e. Code Enforcement Module) was successfully implemented at DPZ and the Health Department while the Contractor License module was implemented at DPWES and the Health Department.

In FY 2006, the FIDO permits module replaced ISIS at DPWES and in FY 2007 this module was also expanded at the Fire Department. FY 2007 activities also included the expansion of the Complaints Module at DPWES and FRD, respectively. In addition, the FIDO License Module was implemented at the Health Department to support the issuance of licenses to Fairfax County Beauty Salons, summer day camps, pools and child care facilities.

During FY 2008, additional building permit issuance capabilities were provided to Fire and Rescue Department, and well and septic permits (and Food establishment licenses) were added to FIDO modules at the Health Department, and the FIDO Code Enforcement (i.e. Complaints) Web page was expanded to include all (FRD, DPWES, Health Department) land use code enforcement violation types to facilitate detailed citizen reporting of alleged land use code violations.

In order to improve coordination and collaboration of County Code Enforcement activities and resolve code enforcement issues (e.g. homes with severe overcrowding in unsafe living conditions) a Strike Team was created to handle the most significant code enforcement violations with a cross-departmental team from Zoning, Public Works and Environmental Services, Fire and Rescue, Health, Housing, Police, and Sheriff.

Further enhancements to FIDO are required to sustain and expand the code enforcement efforts. Through the FIDO project the four critical departments assigned to the Strike Team — DPZ, DPWES, FRD, and Health — have many permits, inspections and complaints co-located in one central repository. However, Strike Team cases typically involve multiple violations that cross over multiple departments, codes, ordinances, and laws and therefore system enhancements are necessary to meet their specific business process and information reporting needs.

The FIDO solution is consistent with County standards and fits well with County's e-government strategy of using emerging technologies.

## 2.6 ENTERPRISE TELECOMMUNICATIONS

Superior voice communications is an organizational requirement in today's technological landscape. As government is asked to do more with less, stretching limited financial and human resources, it relies heavily on efficient voice communications to improve effectiveness in meeting the growing needs of constituents. Whether it is citizen access via e-government; efficient management of government information; the advancement of education; the safety of our children on school buses; or homeland security; voice communications plays an enormously critical role.

Integrating voice, video and data communications onto a common structure, which has been envisioned by the industry since the 1980's, is now becoming a reality. This convergence will bring tremendous benefits to enterprises such as Fairfax County that need enterprise-wide voice and data networks. New types of voice service platforms that support data application integration are commercially available and are seen as a cost effective means of improving County's service to citizens. Currently, that fully converged world is the provenance of "early adopters". After decades of high quality phone service provided through the traditional telephone networks, users expect new systems to have consistent voice quality, with never a doubt that they will hear dial tone when they lift the telephone receiver.

The long-term strategy for Fairfax County is to implement Voice over IP (VoIP) services and obtain the maximum utilization of its networking capabilities as well as garner the advantages in functionality and features that this leading-edge technology provides. DIT is implementing a strategy for voice services, utilizing convergent-IP ready technology, over the County's fiber I-Net. This strategy includes a solution architecture that is scalable to support the variety of county sites and agency business requirements distributed over 400 square miles. The strategy uses IP-based telephone service at the smaller sites, so that they can be brought into the common voice enterprise architecture, avoiding investment in larger more expensive equipment. Careful planning will significantly reduce the risks involved in converging IP data traffic with IP voice traffic onto one data network.

This strategy is both prudent and forward-looking. It will position the County to increase its use of advanced convergent technologies as these technologies mature. It allows the county to leverage its wide-area fiber network – I-Net for data, video and voice, and facilitates reductions in other voice service operational costs. The plan is in full alignment with the County's principle of implementing contemporary, but proven, technologies, optimizing IT investments and creating more operational cost efficiencies.

The following six strategic goals for Fairfax County voice services were developed and endorsed by County's Executive Management and serve as the building blocks for Fairfax County's Strategic Voice Technology Platform:

| Goal | Solution Element | Benefit to Fairfax County |
|---|---|---|
| 1 - Optimize the total life-cycle cost for voice services | Centralized Servers<br>Telephone sets can be moved by users w/o requiring system programming<br>Secure Centralized Management accessible from anywhere | Reduced cost to update/upgrade.<br>Moves Adds and Changes become less expensive.<br>No increase in personnel needed to manage the system |
| 2 - Provide common voice architecture, County-wide | Modular, scalable, "plug n' play" hardware and software components | Reduced cost to manage and maintain. Common look and feel of applications and telephones improves productivity of users<br>Users and applications are portable; ex. Call Center agents can be anywhere internally or externally and have the same capabilities. Users can move between sites and take their number with them, with or without moving their phone |
| 3 - Provide secure remote access for voice and data to expand Telework | IP Softphone/Agent with Advanced Encryption Standard (AES). Unique dual line Softphone, splits network signaling from voice<br>Citrix support for IP Agent | Conversations remain private and users can work from anywhere<br>Simplified operation for remote users that doesn't require QoS and allows use of any telephone<br>Contact Center agents can be remote and have secure access to applications. |
| 4 - Provide compatibility with "best-in-class" citizen access technologies | Contact Center, i.e. Skills Based Routing.<br>Mobility Solutions, i.e. Extension to Cellular. | Maximize # of productive information exchanges.<br>Citizens can reach County workers even when they are away from their office.<br>All employees/citizens have same opportunity to access information |
| 5 - Develop a survivable architecture that is scalable and flexible | 4 Layers of Redundancy, i.e. Mirrored Main Servers, Enterprise Survivable Servers (ESS), Local Survivable Processor, Redundant components<br>Moduler Components | Unparalleled reliability and resiliency of underlying architecture<br>Lower TCO as components can be combined and used in different ways like Lego building blocks |
| 6 - Prepare for the convergence of voice and data onto one logical network | Applications are media agnostic.<br>Universal licenses | Applications can be extended anywhere to any device, increasing productivity, and reducing cost.<br>Add IP Telephones when and where needed at reduced expense. Existing features work the same as users move from Digital Telephones to IP Telephones thereby easing transition and increasing productivity |

To achieve the goals for next generation voice switch architecture, as discussed above, there are a number of technical requirements that the target architecture should meet. The solution must support the County's integrated network philosophy with a single logical architecture. The solution must address the large number of County locations supporting a variety of business and operational needs. The solution must support a range of configurable telephone instruments and feature sets. Finally the solution must also address the following requirements:

- Constituent Relationship Management (CRM) Technology
- Automated Call Distribution/ Interactive Voice Response
- Computer Telephone Interfacing
- Remote Access and Telework
- Unified Messaging
- County-wide Voicemail
- Inbound Caller ID

The transformation of Fairfax County's voice platform is a significant endeavor that requires a great deal of planning and thoughtful implementation over many months, but it will have a revolutionary impact on the way that the County conducts business and provides services to its constituents. Voice over IP (VoIP) is clearly the strategic technology that the County embraces, using a phased approach to minimize risks at the two core locations. The new voice network infrastructure provides uniformity of telephone features at all County locations and will be the foundation upon which to integrate function specific call centers, creating a virtual Constituent Contact Center to streamline incoming call processing while reducing call center operating costs.

In FY 2006 the County selected a competitive solution and began implementation. This comprehensive project continues into and beyond FY 2009. The new functionality and integration of the voice and data platforms have already been implemented in a number of county facilities. The replacement of the current telephony infrastructure will serve approximately 15,000 Fairfax County employees. The migration will occur in phases which will allow multiple opportunities and avenues to prepare the FCG community for the transition, and thereby ensure a smooth change of voice platforms. Successful implementation requires accurate and consistent communications regarding project status, system features and functionality, dialing plan information, and changes that users (both employees and citizens) can expect.

## 2.7 LAND INFORMATION ACCESSIBILITY

In January 2006 the Board of Supervisors established the Fairfax County Land Use Information Accessibility Advisory Group ("Advisory Group"). The purpose was to review how land planning and development information is currently made available to the public, and to make recommendations for accessibility improvements. The target stakeholder audience includes County staff and management, novice citizens, active land use citizens, developers, property owners, and others with an interest in knowing more about proposed and ongoing land planning and development activities.

The final report was accepted by the Board of Supervisors in January 2007. The Advisory Group appreciated the responsiveness that County staff had already provided for this initiative. In addition, they recognized several significant improvements that staff had already implemented since the inception of this Board request, including:

- New web page design to reorganize and consolidate the land planning and development information (http://www.fairfaxcounty.gov/living/landuse/)
- New ability to search the Land Development System using a County address to see all nearby land planning and development cases (on a map or by listing, with drill down capability; http://www.fairfaxcounty.gov/ldsnet/ )
- New ability to search the Land Development System by Magisterial District to see area land planning and development cases (on a map with drill down capability; http://www.fairfaxcounty.gov/ldsnet/ ).

During FY 2008 and FY 2009 additional improvements are being implemented to improve public access to land development information based on funding availability, including:

- Adding Building Permit data to the LDSNET Search by Address\Search by Magisterial options,
- Providing web page accessible land planning and development case summaries in PDF downloadable formats,
- Enhancing the LDSNET and My Neighborhood web page integration to streamline end user navigation.


The Advisory Group recommended that the County embrace and build towards short-term, medium-term, and long-term improvements for land use information. Listed below are summaries of the 12 guiding principles, followed by 17 recommendations.

### Twelve Guiding Principles for Fairfax County Land Use Information

The following 12 guiding principles are designed to help maximize public involvement in the land use review and approvals processes, and encourage the continuing modernization of information technologies in Fairfax County's land use review and approval processes.

1. Make land use information publicly available and accessible at the earliest opportunity.
2. Use geocoding standards across all County databases, land planning systems, electronic development files, and documents.
3. Collect and manage information so that it can be accessed from multiple entry points such as geographic location or by steps in the land use approval process.
4. Make all public land use information easy to find, including information developed by others and submitted to the County, as well as County-generated information.
5. Ensure consistency and user friendliness across all web pages and across all ag0encies of the County.
6. Create standard report forms to allow searches across projects and aggregation of those data for use by County citizens.
7. Make sure that information systems and any changes made to them are open and scalable so future needs can be addressed.

8. Tailor land use pages to meet the needs of different user types, and provide information as early as possible about Comprehensive Plan land use proposals.
9. Require external land planners and developers to submit land use application information to the County via electronic files using geocoding standards; also request 3D modeling and other visualization technology for larger and more complex land developments.
10. Make land use information accessible to citizens with a range of access to tools and resources, including users with no or limited access to the Internet.
11. Establish procedures and provide resources to keep land use information as timely and accurate as possible.
12. Investigate ways to increase the dialog and information sharing among all land use stakeholders.

The following 17 recommendations and improvements are intended to be designed and implemented over a number of years:

- ***Expanded Application of Land Use Information Tools.*** The Advisory Group recommends development of a more integrated and intuitive "front end" web page or portal or repository that enables users to go to one location and search for land planning and development information relevant to their inquiry location; further integration of LDSNet, My Neighborhood, GIS, the Courts Automated Retrieval System (CARS), the Fairfax Inspection Database Online (FIDO) system that contains permits and inspections information, and the DTA IAS system which contains real estate parcel information, and other related systems; expansion of the My Neighborhood capabilities combined with a data warehouse; providing more land use data that can be imported into a constituent spreadsheet for further analysis.
- ***Further Integration of GIS into all County Land Use Information Systems.***
- ***Land Use Public Hearing Information***. For public hearings the County should make available electronically the information currently provided in the hard copy (staff report, proffers, development plans, and affidavits).
- ***Notification Process Above & Beyond State and Ordinance Requirements.*** Fairfax County should study how to provide a process to electronically notify interested citizens about pending land use actions within a user-specified distance of a County address and according to certain categories of proposed land use.
- ***Improve Access to Site-Specific Land Use History.***
- ***Electronic File Submission and Review.*** Fairfax County should update land use review processes to facilitate electronic file submission and review.
- ***Citizens and contractors requesting permits should be able to file electronically and utilize address or other information already on file with the County.***
- ***Land Use Orientation Page and Activity Calendar.***
- ***Verbatim Excerpts and/or Viewable Proceedings of Planning Commission Decision Discussions Should be Available Online.***
- ***Collection of Approved Plans and Visualization of Community-Wide Development.*** The County should collect an electronic version of approved development plans and build an easily searchable electronic library.
- ***Create New GIS Overlays.*** The Comprehensive Plan should evolve into a more digital model with GIS layers showing the approved plan with options and alternatives and a layer showing existing property development.
- ***Coordination within the County.*** The County should work to ensure more cross-departmental coordination and use of spatial data, including public access.
- ***Coordination with Other Jurisdictions.*** The Advisory Group recommends that County staff stay in close contact with other jurisdictions and other agencies (e.g. VDOT) in an effort to make land use information more accessible, to learn about new techniques and technologies, and to participate in collaborative initiatives.
- ***Outreach to County Stakeholders such as Citizens and Businesses.*** The County should use available land use information and

technologies to improve its conversation with and among citizens about land use.

- ***Outreach to Civic and Homeowner Associations.*** The County should encourage organizations like the Federation of Citizen Associations, District Councils, and larger citizen associations to work closely with Board member offices to collect information about which addresses and parcels are associated with each particular civic or homeowner association.
- ***Ongoing Focus Groups.*** Some type of periodic ongoing advisory group should meet to monitor progress and make further recommendations.
- ***Enhancements to the Board Auditorium.*** Enhance the capability for speakers and staff to use electronic media presentations and GIS displays in the Auditorium.

The Advisory Group encouraged the County to embrace the concept of continual innovative and incremental improvements as well as longer-term larger improvements as changes in business processes and technology permit. The Advisory Group also recommended that the Board provide consistent funding and sufficient resources to implement these recommendations as well as to sustain ongoing improvements.

To begin achieving the Advisory Group's vision, there will be a series of projects for new systems and enhancements made to existing systems. The final Advisory Group Recommendations are available at: http://www.fairfaxcounty.gov/landusecomm/

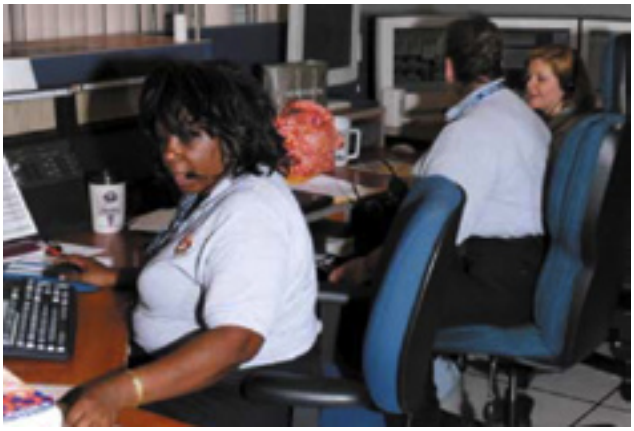
## 2.8 PUBLIC SAFETY INFRASTRUCTURE MODERNIZATION

The goal of the Public Safety Infrastructure Modernization Project is to procure an integrated suite of software to support Computer Aided Dispatch (CAD) and Records/Information Management Systems (RMS) for Fairfax County's Public Safety agencies. It includes the following major components:

- Replacement of the existing Northrop Grumman Computer Aided Dispatch system, Altaris
- Replacement of the existing Police Records Management system,
- Acquisition of EMS Incident Reporting solution for the Fire and Rescue Department, and
- Upgrading the current Fire Records Management system.

The CAD/RMS will serve as the core of this integrated, comprehensive public safety information management system. The County conducted a procurement process, starting with a Request for Qualifications (RFQ), followed by an RFP and a rigorous evaluation of the proposals in order to obtain a modern, integrated state-of-the-art solution with a proven track record.

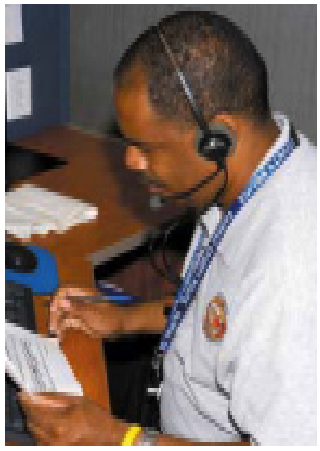
This project will provide the County's public safety first responders with ready access to the tools that will enable sharing of tactical information, often in real time and on-site, with a number of different entities such



as emergency management agencies; neighboring Public Safety Access Points (PSAP) and Police and Fire departments; as well as state and federal authorities including Department of Defense components. These requirements are particularly critical for the County and other jurisdictions in the National Capital Region and are consistent with NIMS guidelines.

There are numerous technical and functional improvements a new system will offer the County, and many are considered "baseline" products in current generation CAD and RMS applications. This new solution will include the following essential technical improvements:

- Integrated CAD/Records Management System for Police and Fire and Rescue - The current Police Records Management System is twenty years old, not integrated with CAD, and well past normal life cycle replacement. It does not support modern law enforcement and crime analysis activities.



- Automatic Vehicle Location (AVL) – The current CAD does not support GPS technology and applications to track the locations of public safety units. This is vital feature to insure personnel safety, as well as operational capabilities such as nearest unit response and appropriate resource utilization.
- Nearest Unit Response – Efficient routing based on quality mapping data, in combination with AVL will provide the fastest response to the scene and insure that the closest, most appropriate unit is provided with the optimal routing.
- Standards-Based GIS Capability that will integrate with and leverage existing County GIS data layer and mapping resources — Geographically represented data and information is essential to all pubic safety agencies, for both after action and statistical reporting, and for on-scene response and incident management. Integrated standards based GIS capabilities will enable the county to leverage technology resources and skill sets across the enterprise and increase efficiency.
  - Standards-based interoperability to support both internal County data and information sharing across public safety and related agencies, as well as critical external data and information sharing such as CAD to CAD, interoperability with Virginia Department of Transportation as well as Virginia State Police will provide collaborative incident response with neighboring jurisdictions supporting mutual response.
  - Up-to-date tools that improve system administration, enabling the County to better manage and own its application and increasing the ability for Public Safety to respond quickly and effectively to changing needs, and reducing reliance on third-party support and overall system maintenance costs.
- A non-proprietary, standards based system architecture built on a standard platform that reduces the frequency of costly and invasion forklift replacements based on hardware obsolesce. This improves the County's posture for planning refresh cycles into warranties and maintenance plans

## 2.9 LEGACY SYSTEM REPLACEMENT

The Fairfax County government and school system have embarked on a multi-year joint initiative that will modernize the portfolio of enterprise systems that support finance, human resources, budget, procurement and related administrative applications with a modern, integrated corporate solutions applications suite.

The project partners, County government and school system, are committed to fully participate and dedicate the necessary resources to successfully support the initiative. Additionally, as is the current methodology, the government and school system will operate on a unified financial, budget and purchasing system and will strongly consider future use of a joint human resources system.

The current 'stovepipe' legacy corporate systems are on various legacy technology platforms using a variety of hardware and software architectures integrated through a number of interfaces, integration and reporting tools. Previous assessments of these aging systems revealed that they are past their projected useful lifecycle, no longer meet today's technology standards, and do not meet the demands of resource and financial management and decision-making and improving internal processing efficiencies. Of these systems, the County government's Personnel Resource Information System Management (PRISM) is the most vulnerable to immediate obsolescence issues. It is over 20 years old and highly customized based on historical County operational practices to the extent that it cannot be further enhanced. Further, attrition of in-house technical staff as they approach retirement will jeopardize future support for maintaining this legacy application with the other systems approaching a similar expert support dilemma.

A governance body of senior officials of the County and school system stakeholder agencies has endeavored to identify the optimal strategy to pursue in its effort to procure an integrated financial/procurement/human resources/budget suite that will support agencies in the delivery of government and school services and activities, take advantage of best practices, provide the opportunity for multi-faceted data-driven decisions, significantly improve the efficiency and effectiveness of existing processes, enhance e-government initiatives and promote tele-work opportunities, and aid in the transformation and standardization of financial and human resource processes. This initiative will foster an environment of change and redesign to allow for more efficient and effective processes.

Previous funding was provided to begin an assessment of the legacy systems used to support core business functions; identify, review and streamline existing business processes currently supported by the legacy systems; perform and analyze a review of existing and future trends in the software and systems implementer marketplace; and identify and refine functional business requirements necessary in the future software. FY 2009 funding is provided to continue the investment in this initiative, positioning the project to award the software and systems implementer contracts.

The County and the Schools joint project team will ensure that the key owners and stakeholders within the enterprise will receive comprehensive opportunities in regards to the mapping of current processes, the initiation of system requirements and the selection of the appropriate software and implementation services. It is anticipated that an enterprise-wide, automated and fully function ERP will launch the County and the Schools into a new method and mode of doing business. The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data. Automation and modernization will empower both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information. This shifts the orientation of the system from that of a data repository to one of an information system solution. With the migration to a more standard, supportable database and development environment that incorporates workflow and Web technology, both the County and FCPS anticipate a more customer friendly platform and architecture for some time to come.